National Institute of Environmental Health Sciences

Agriculture and food systems in sub-Saharan Africa in a 4 degrees C+ world

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Abstract:

Agricultural development in sub-Saharan Africa faces daunting challenges, which climate change and increasing climate variability will compound in vulnerable areas. The impacts of a changing climate on agricultural production in a world that warms by 4 degrees C or more are likely to be severe in places. The livelihoods of many croppers and livestock keepers in Africa are associated with diversity of options. The changes in crop and livestock production that are likely to result in a 4 degrees C+ world will diminish the options available to most smallholders. In such a world, current crop and livestock varieties and agricultural practices will often be inadequate, and food security will be more difficult to achieve because of commodity price increases and local production shortfalls. While adaptation strategies exist, considerable institutional and policy support will be needed to implement them successfully on the scale required. Even in the 2 degrees C+ world that appears inevitable, planning for and implementing successful adaptation strategies are critical if agricultural growth in the region is to occur, food security be achieved and household livelihoods be enhanced. As part of this effort, better understanding of the critical thresholds in global and African food systems requires urgent research.

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Resource Description

Climate Scenario : ☑

specification of climate scenario (set of assumptions about future states related to climate)

Special Report on Emissions Scenarios (SRES), Other Climate Scenario

Special Report on Emissions Scenarios (SRES) Scenario: SRES A1, SRES A2, SRES B1

Other Climate Scenario: A1B

Communication: ☑

resource focus on research or methods on how to communicate or frame issues on climate change; surveys of attitudes, knowledge, beliefs about climate change

A focus of content

Communication Audience: ☑

audience to whom the resource is directed

Policymaker

Exposure : ☑

weather or climate related pathway by which climate change affects health

Food/Water Security, Temperature

Food/Water Security: Agricultural Productivity, Livestock Productivity

Temperature: Extreme Heat

Geographic Feature: ☑

resource focuses on specific type of geography

None or Unspecified

Geographic Location: ☑

resource focuses on specific location

Non-United States

Non-United States: Africa

African Region/Country: African Region

Other African Region: Sub-Saharan Africa

Health Impact: ☑

specification of health effect or disease related to climate change exposure

Malnutrition/Undernutrition

Intervention: ☑

strategy to prepare for or reduce the impact of climate change on health

A focus of content

Mitigation/Adaptation: ☑

mitigation or adaptation strategy is a focus of resource

Adaptation

Model/Methodology: ☑

type of model used or methodology development is a focus of resource

Exposure Change Prediction

Population of Concern: A focus of content

Population of Concern: ☑

populations at particular risk or vulnerability to climate change impacts

Low Socioeconomic Status, Workers

Resource Type: ☑

format or standard characteristic of resource

Research Article

Timescale: ☑

time period studied

Medium-Term (10-50 years)

Vulnerability/Impact Assessment: ☑

resource focus on process of identifying, quantifying, and prioritizing vulnerabilities in a system

A focus of content